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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,329	01/15/2004	Igor E. Bondarev	04-4008-US (501661.20001)	6389

7590 06/28/2005

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EXAMINER	
WOLLENBERGER, LOUIS V	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,329	BONDAREV ET AL.	
	Examiner	Art Unit	
	Louis V. Wollenberger	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2004*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-58* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1–5, 8, 9, 16–20, 23, 34, and 37, drawn to methods for inhibiting the expression and/or activity of LINE-1 reverse transcriptase in cells *in vivo* or *in vitro*, comprising the use of an antisense sequence, classified in class 514, subclass 44.

II. Claims 1, 2, 4, 6–17, 19, 21–29, and 36–40, drawn to methods for inhibiting the expression and/or activity of LINE-1 reverse transcriptase in cells *in vivo* or *in vitro*, comprising the use of an inorganic compound, an organic compound, such as a nucleoside analog, or a small molecule, classified in class 514, subclass 1, for example. Election of this group requires the further election of a single class of inhibitory compound; specifically, applicant must elect inorganic compounds or organic compounds, recited in Claims 2 and 17, for prosecution with this group.

III. Claims 1, 2, 4, 8, 9, 16, 17, 19, and 23, drawn to methods for inhibiting the expression and/or activity of LINE-1 reverse transcriptase in cells *in vivo* or *in vitro*, comprising the use of a peptide, classified in class 514, subclass 2, for example.

IV. Claims 24, 26–28, 30–34, and 36, drawn to a method for inhibiting the growth of a telomerase negative cell, comprising the use of a construct

capable of expressing a human L1RT antisense sequence, classified in class 514, subclass 44, for example.

V. Claim 35, drawn to a method for inhibiting the growth of a telomerase negative cell, comprising the use of an antisense-containing ribozyme, classified in class 514, subclass 44, for example.

VI. Claims 41–45, drawn to a composition comprising a polynucleotide capable of encoding a nucleic acid capable of interfering with L-1 (LINE-1) activity, and host cells thereof, classified in class 514, subclass 44.

VII. Claims 46–49, drawn to a method for selecting a compound capable of shortening telomeres, classified in class 435, subclass 6, for example.

VIII. Claims 50–54, drawn to methods for detecting cells that are cancerous or that are capable of pathologically proliferating, classified in class 436, subclass 6, for example. Election of this group requires the further election of a single nucleic acid probe sequence, recited in Claim 54, as explained below.

IX. Claims 55–58, drawn to a kit, comprising a nucleic acid probe for detecting pathologically proliferating cells, classified in class 435, subclass 6. Election of this group requires the further election of a single nucleic acid probe, recited in Claim 58, as explained below.

The inventions are distinct, each from the other because of the following reasons:

Inventions I–V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, Inventions I–V are unrelated because they are not disclosed as useful together, and because they have different modes of operation and different effects. For example, Invention I requires the use of an antisense sequence, which is not specifically required by any of the other groups. Invention II requires the use of small molecules, inorganic compounds, or organic compounds such as nucleoside analogs. Inorganic compounds and nucleoside analogs are not specifically required by any of the other groups. Although the terms "organic compound" and "small molecule" may encompass agents such as antisense oligonucleotides and peptides, the terms include many other unclaimed compounds, which may differ both physically and functionally from those recited in Groups I, III, IV, and V. Invention III requires the use of a peptide, which is not required by any of the other groups. Invention IV requires the use of a construct capable of expressing an antisense sequence, which is not required by any of the other groups. Invention V requires the use of an antisense-containing ribozyme, which is not required by any of the other groups.

Inventions I–V and VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product

polynucleotide and host cell compositions can be used in materially different processes. For example, the polynucleotide of Invention VI can be used as a general transfection marker with a variety of telomerase negative cell lines to monitor transfection efficiencies and to optimize transfection conditions. Host cells comprising the product polynucleotide may be used as general screening tools to identify agents that inhibit or inactivate enzymes required for telomere maintenance.

Inventions I–V and VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the inventions are unrelated because they are not disclosed as useful together, and because they have different modes of operation and different functions. For example, the methods of selecting for compounds capable of shortening telomeres, according to Invention VII, requires testing a large number of potential L-1 (LINE-1) reverse transcriptase inhibitors in cultured cells, which is not a step required in the methods of treating an individual for cancer, interfering with the lengthening of telomeres, or preventing the growth of telomerase negative cells, all of which require the use of known inhibitors or antagonists of LINE-1 reverse transcriptase.

Inventions I–V and VIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the inventions are different because they are not disclosed as useful

together, and because they have different modes of operation and different functions. For example, the methods of detecting the presence of cancerous cells, according to Invention VIII, requires testing for telomere shortening, G2 arrest, or apoptosis, which is not a step required in the methods for treating cancer, interfering with the lengthening of telomeres, or preventing the growth of telomerase negative cells. Similarly, the methods of detecting pathologically proliferating cells, according to Invention VIII, requires that tissue be extracted and then probed with a nucleic acid or antibody, which are not steps required in the methods for treating cancer, interfering with the lengthening of telomeres, or preventing the growth of telomerase negative cells, according to Inventions I–V.

Inventions I–V and IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the inventions are different because they are not disclosed as useful together, and because they have different modes of operation and different functions. For example, the product kit for detecting pathologically proliferating cells, according to Invention IX, comprises nucleic acid probes that are not disclosed as useful in the methods for treating cancer, interfering with the lengthening of telomeres, or preventing the growth of telomerase negative cells, according to Inventions I–V.

Inventions VI and VII are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially

different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product polynucleotide, recited as being capable of expressing a nucleic acid segment, broadly encompasses expression vectors in general, which may be used as general molecular biological reagents to clone DNA, prepare cDNA libraries, synthesize protein, and create transgenic organisms, which are not required in the methods for evaluating anti L-1 (LINE-1) activity in cells, tissues, or animals. The host cells may be used to produce recombinant proteins, which is, similarly, not required in the methods for evaluating anti L-1 (LINE-1) activity in cells, tissues, or animals.

Inventions VI and VIII are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product polynucleotide, recited as being capable of expressing a nucleic acid segment, broadly encompasses expression vectors in general, which may be used as general molecular biological reagents to clone DNA, prepare cDNA libraries, synthesize protein, and create transgenic organisms, which do not involve evaluating anti L-1 (LINE-1) activity or detecting L1RT expression in cells, tissues, or animals.

Inventions VI and IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In

the instant case the inventions are drawn to functionally and physically distinct products that are capable of separate manufacture and use and are not required one for the other. For example, the polynucleotide constructs and host cell compositions of Invention VI are functionally and physically distinct from the nucleic acid probes of the kit for detecting pathologically proliferating cells.

Inventions VII and VIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the inventions are unrelated because they are not disclosed as useful together, and because they have different modes of operation and different effects. For example, Invention VII requires screening a large number of potential inhibitors, which have unknown inhibitory profiles, whereas Invention VIII uses only known, previously identified inhibitors or antagonists of L-1 reverse transcriptase.

Inventions VII and IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the inventions are different because they are not disclosed as useful together, and because they have different modes of operation and different functions. For example, Invention VII, drawn to methods of selecting for inhibitory compounds, requires administering a large number of candidate test compounds with unknown inhibitory profiles to cultured cells or non-human animal models, whereas Invention IX is

drawn to a kit comprising a nucleic acid probe, which has a known sequence and activity, and is thus specifically not useful in the method of screening for L1RT inhibitors.

Inventions VIII and IX are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product may be used in a materially different process. For example, the nucleic acid probes of Invention IX may be used as transfection markers to optimize transfection conditions and to monitor transfection efficiency.

Because these inventions are distinct one from the other for the reasons given above and because the searches for each are divergent and not coextensive, examining all these inventions in a single application presents a serious burden on the examiner. Thus, restriction for the purposes indicated is proper.

Linked Inventions

Claims 1 and 16 link inventions I–III. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), Claims 1 and 16. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or

including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Further Election

Should applicant elect to prosecute Group II, applicant will be required to further elect a single (1) type of inhibitory compound as recited in Claims 2 and 17. As they relate to Group II, Claims 2 and 17 limit the invention to methods that use either organic or inorganic compounds as inhibitors. These two classes of compounds are distinct one from the other, both physically and functionally. Thus, claims to one class are independent and distinct from the other. In addition, examining claims to each compound would require different non-overlapping searches, imposing a serious burden on the examiner. Applicant is therefore required to elect either organic compounds or inorganic compounds for prosecution with the claims of Group II.

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Should applicant elect to prosecute Group VIII, this Group is subject to further restriction as follows. Claim 54 claims nucleic acid probe SEQ ID Nos. 2–6. Although the sequences corresponding to SEQ ID Nos. 2–6 each target the same gene, the instant oligonucleotide sequences are considered to be unrelated, since each

oligonucleotide sequence claimed is structurally and functionally independent and distinct: each oligonucleotide sequence has a unique nucleotide sequence, and each oligonucleotide sequence targets a different and specific region of the L1RT mRNA sequence. Furthermore, a search of more than one (1) of the oligonucleotide sequences claimed in Claim 54 presents an undue burden on the Patent and Trademark Office due to the complex nature of the search and corresponding examination of more than one (1) of the claimed sequences. In view of the foregoing, one (1) oligonucleotide sequence is considered to be a reasonable number of sequences for examination. Accordingly, applicants are required to elect one nucleic acid probe sequence from Claim 54 for prosecution with Group VIII.

Should applicant elect to prosecute Group IX, this Group is subject to further restriction as follows. Claim 58 claims nucleic acid probe SEQ ID Nos. 2–6. Although the sequences corresponding to SEQ ID Nos. 2–6 each target the same gene, the instant oligonucleotide sequences are considered to be unrelated, since each oligonucleotide sequence claimed is structurally and functionally independent and distinct: each oligonucleotide sequence has a unique nucleotide sequence, and each oligonucleotide sequence targets a different and specific region of the L1RT mRNA sequence. Furthermore, a search of more than one (1) of the oligonucleotide sequences claimed in Claim 58 presents an undue burden on the Patent and Trademark Office due to the complex nature of the search and corresponding examination of more than one (1) of the claimed sequences. In view of the foregoing, one (1) oligonucleotide sequence is considered to be a reasonable number of sequences for examination. Accordingly,

applicants are required to elect one nucleic acid probe sequence from Claim 58 for prosecution with Group VIII.

Rejoinder

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re*

Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis V. Wollenberger whose telephone number is 571-272-8144. The examiner can normally be reached on Mon–Fri, 8:00 am–4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Andrew Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval system (PAIR). Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

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June 3, 2005

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